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An Assessment of Nurses' Knowledge and Attitudes toward End of Life Care Pain
Management

by

Amy Davis

A thesis submitted to the faculty of
Gardner-Webb University School of Nursing
in partial fulfillment of the requirements for the
Master of Science in Nursing Degree

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Abstract

This study was completed to help determine if nurses had a true understanding of how to provide pain management to patients in their care who were at the end of their life. A review of literature was completed and it revealed that nurses have a fear of opioid overdose and respiratory depression in their patients when providing proper pain management. It also revealed that patients have a fear of dying in pain at the end of their life especially if they have been diagnosed with a terminal illness. The study also revealed that when patients die in pain it actually impedes quality of life and that there are too many patients that are still dying in pain. The conceptual framework that guided this study was Betty Neuman's Healthcare Systems Model on how stressors can have a direct impact pain management. Statistical analysis was completed from the sample size of 26 participants and revealed that nurses showed knowledge on pain management however, needed more knowledge and education in knowing how to document the patient's pain accurately and administer accordingly. There is still evidence that shows patients are dying in pain and are undertreated for pain. As nurses and patient advocates this is where an intervention needs to be made. No patient deserves to die in pain when there are plenty of opioid or non-opioid medications to choose from that will help alleviate the symptoms and discomfort.

Keywords: pain management, hospice nurse, end of life care, quality of life, nurses attitude regarding pain

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CHAPTER I

Introduction

The fear of overdosing patients on narcotic pain medication is seen in daily practice of nurses and physicians whether it is acute care, long term care, or hospice facilities. However, pain left undertreated can impede the quality of life of an individual. The purpose of this thesis is to determine the nurses' knowledge and attitude regarding pain management during the end-of-life. There is too much information that shows patients are dying in pain that could be treated, especially patients with chronic illnesses. This needs to change so patients are able to die as pain free as possible. Learning how to treat pain with patients nearing the end of life must become a priority. This has been an area that has been neglected for far too long. A group of oncologist was surveyed and the findings included that 76% of physicians rated poor pain assessment as the most common cause of undertreated cancer pain and 86% of physicians felt that the patients were under medicated (Thompson, 2001). Having research data from the nurse's perspective could help in the future when trying to get the physicians on board this hot topic to see if patients are receiving adequate pain medication at the end of life.

Problem Statement

What is the nurse knowledge and attitude of nurses regarding pain management during the end of life? The current literature shows that patients are dying in pain that could have been treated prior to death. The literature also states that patients have a fear of dying in pain and that most patients experience pain before death. Nurses are vital members of the health care decision making team and physicians seem to listen to the nurses especially when patients are nearing death and are in pain. When pain is left

untreated it is a huge problem for every single person involved with that patient. The patient is suffering when it could very easily be avoided. The family and loved ones of the patient are seeing the patient suffer and want to help fix the problem, not to mention it is a very emotional time for the family as well. The nurses taking care of the patient do not want the patient to suffer because it makes them feel as if they are not doing their job, and the same goes for the physician involved in the care as well. Potentially any patient who is near the end of their life could be affected by pain management not being treated as adequately as it could be. A consequence of pain being undertreated is that it could cost more money in healthcare than actually treating the pain. Increasing pain medication would be an easier, more sensible, and less expensive option than ordering more advanced tests that will not change the outcome for the patient. A knowledge gap exists between why the patients are dying in pain left untreated and the nurse's perception of pain management. During the data collection and analysis section of the research, the goal would be to find out exactly what are the nurse's perceptions concerning pain management at the end of life care. Depending on the findings, the research could show if more education is needed in this area.

Justification of the Research

Patients are dying every day from chronic disease and illnesses and they are dying in pain that can be treated. This research is needed to determine how nurses perceive pain management. Do nurses feel patients are being under medicated or over medicated at the end of life? This research will help to guide the path for future pain management in patients nearing the end of life. Some of the barriers from nurses regarding pain include anxiety about the use of opioid drugs, risk of respiratory depression, and inadequate pain

assessment (Blondal & Halldorsdottir, 2009). Unrelieved pain is not only harmful but costly due to the financial, physical, and psychological burdens (Blondal & Halldorsdottir, 2009). In the past, researchers have been somewhat negative on the nurses and their thoughts on pain management. However, nurses are key members in pain management and yet it has been said that nurses underestimate pain and are very reluctant to administer opioids (Blondal & Halldorsdottir, 2009). A study was done to improve pain management and it revealed that 55-71% of patients in the hospital have experienced pain in the past 24 hours (Gunnarsdottir & Gretarsdottir, 2011). Under treatment of all types of pain including: acute, cancer, and non-cancer pain is a global problem, the pain has been improperly assessed, documented, and diagnosed for far too long.

Purpose

The purpose of this MSN thesis is to determine “An Assessment of Nurses’ Knowledge and Attitudes toward End of Life Care Pain Management”. The research data and analysis showed what the perceptions are regarding pain management at the end of life care. The research study consisted of nurses being surveyed on their attitudes and knowledge regarding pain. Once all data was in, this research study showed how the nurse perceives pain management at the end of life care. This study will also help to determine if more education is needed in this area.

Thesis Question

What is the nurse knowledge and attitude of nurses regarding pain management during the end of life? The research question is testable and will have a quantitative measure due to the results being measured in a statistical procedure. The research study was conducted in the form of nurses being surveyed “Knowledge and Attitudes Survey

Regarding Pain,” a tool used to assess pain management in practice developed by Ferrell and McCaffery (2012).

Conceptual Framework

The conceptual framework that was used for this research study was Betty Neuman and the Health Care Systems Model. The Betty Neuman model uses a systems approach that focuses on the human needs of protection or relief from stress (McEwen & Wills, 2011). Betty Neuman has defined five variables that retain stability. These include: physiologic, psychological, sociocultural, developmental, and spiritual. The Neuman Systems Model works well for patients who react to certain stressors and cause the line of defense to strengthen (McEwen & Wills, 2011). Stressors can have a direct impact on pain management. The patient is viewed as having a core with protective rings around the core. The core consists of the basic needs such as normal body temperature, response pattern, ego structure, and organ structure. The lines of resistance should decrease the stressor reaction and allow the patient to return to a sense of stability. The normal line of defense includes using the five variables and determines how the patient responds to the pain, copes with the pain, and how the pain affects the patient’s spirituality. It is the nurse’s responsibility to determine what factor such as pain is going to affect the stressors and intervene appropriately. (Figure 1).

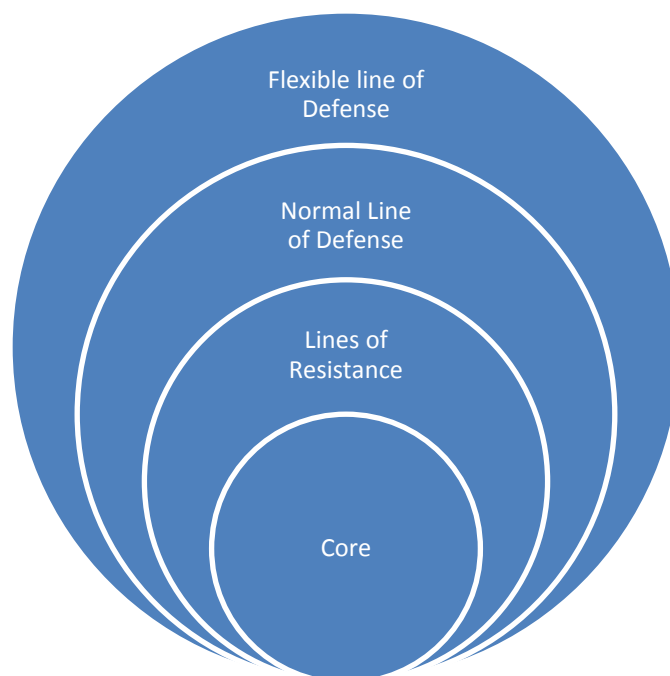


Figure 1. Neuman's Stressors Related to Pain Management

Summary

In summary, how nurses perceive pain management at the end of life can greatly affect the patient and everyone who is involved with that patient. It is vital for this research to take place so nurses can identify if they need to alter their views on pain management, is the patient being over medicated or under medicated. Current research already shows that patients are dying in pain that could be treated or relieved. This is an area that has been neglected for far too long and truly needs some research concluded.

CHAPTER II

Literature Review

The review of literature explored what is the nurse knowledge and attitude of nurses regarding pain management during the end of life? A review of the current literature will help to determine the nurse's perceptions regarding this topic. Current literature showed that nurses report to feeling competent in providing pain management however, when surveyed nurses are not making the mark in providing pain management for numerous reasons; one being they don't feel comfortable giving the medication as ordered, and another reason is they feel they do not have the education needed.

Review of Literature

The literature review was conducted to see what the nurse's knowledge and attitudes are regarding pain management during the end of life. Do nurses feel that adequate pain medication is being given at the end of life? The literature review will help to determine this. The literature review for this research study was conducted using the research database Cumulative Index of Nursing and Allied Health Literature (CINAHL). Key words explored were hospice nurse, pain management, and end of life care, quality of life, and the nurse's attitudes regarding pain.

Qualitative Analysis

In a study completed by Blondal and Halldorsdottir (2009), they examined what it is like to care for patients in pain. The purpose of this study was to determine what are nurses' experiences when caring for patients in pain. The background of this study determined that patients are still experiencing pain even though there has been an increase in the nurses' knowledge, research, and technologies. Nurses are key members

in pain assessment and pain management so it is beneficial to explore the nurses' experiences in caring for a patient in pain. The design was a phenomenological study that involved 20 dialogues and 10 experienced nurses. The population consisted of 249 nurses who had at least two years of experience working on a medical surgical floor in three different hospitals in Iceland. Ten participants were selected from a group of 20 volunteers. Interviews were collected for data collection and were in the form of dialogues. The results revealed that caring for a patient in pain is a challenge. The nurse has four factors to help ease the pain. They include: moral obligation, knowledge, personal experience, and conviction. However, the nurse has four challenges that affect pain management and they include: reading the patient, dealing with inner conflict, dealing with the physicians also known as the gatekeepers, and dealing with organizational hindrances in pain management. The nurses' journey can have a positive or negative outcome depending on how well they feel they have done their job. The conclusion of this study revealed that nurses' knowledge may have been too narrowly defined. A more favorable environment may be better to allow nurses to grow with their experiences and enhance care regarding pain relief. This will help the nurses self-reflect and determine what their strengths are as well as their limitations are concerning pain management.

In a study by Wilson (2008), the purpose of this study was to explore whether a patient's lifestyle influenced the nurses decisions regarding pain management and to explore if education and experience in the clinical setting influenced the nurses attitudes towards pain. Lifestyle factors and behaviors that were thought to influence the nurse decision regarding pain included: age, gender, socioeconomic status, addiction, and

respiratory depression (Wilson, 2008). The sample consisted of 100 questionnaires that were sent out and 86 nurses responded, however only 72 were selected to participate due to the others had been out of the work field for three years and was not considered an expert. Thirty five of the nurses were considered specialty nurses and the other 37 were considered general nurses. The materials consist of two patients requiring pain medication due to an injury, and the lifestyle factor socioeconomic status was the only factor that was manipulated for this study. The nurses were asked to make a pain management decision based on the patients' pain level and lifestyle factors. The data was collected and gathered into Statistical Package for the Social Science (SPSS) and a qualitative analysis was completed. The results revealed that both of the patients in the scenario were under medicated and the nurses were concerned about addiction and respiratory depression and both the specialty nurses and the general nurses influenced their decision based on the patients self-report of pain. The conclusion revealed that a patient's lifestyle factors specific to socioeconomic status can influence the nurse's decision about pain management.

In a study by Mehta, Cohen, Ezer, Carnevale, and Ducharme (2011), the purpose was to describe the different types of pain that patients in the palliative care program experience in the home setting and how their caregivers help to intervene. Patients who have a cancer diagnosis often experience pain, the more advanced the cancer usually the more severe the pain. A lot of patients are now receiving palliative care services for cancer pain in their home, and this means that the caregivers are becoming more responsible for pain management. The methodological approach consisted of a grounded theory and was qualitative in nature. Semi-structured interviews were conducted with

field notes and the data collection consisted of open, axial, and selective coding. The setting took place in the caregivers homes and 24 caregivers who had a loved one with advanced cancer pain participated in the study. The findings revealed that the caregivers expressed different types of pain and were trying different types of interventions to relieve that pain. This meant that some of the patient's pain was poorly managed. In conclusion, caregivers managing pain is a complex process and to be as accurate as possible pain assessments need to be accurate and detailed concerning the types of pain the patients are experiencing and the best interventions for that specific pain. Nurses need to make sure that the patient's caregivers are educated appropriately regarding pain management and interventions for pain control.

Randomized Controlled Trials

In a study by Machira, Kariuki, and Martindale (2013), the purpose was to implement and evaluate a pain management program for nurses in Kenya. The (PMP) or pain management program focused on the nurses' knowledge and attitudes regarding pain. The method used was a pre and posttest quasi-experiment which was used to gather information about the nurses' knowledge and attitudes regarding a patient with a terminal illness. A quantitative study was used to understand the Kenyan nurses' current perception of pain management. The setting was two separate wards in a rural hospital in Kenya. One of the wards was for males the other for females. These wards are already taking care of adult patients with terminal illnesses; however a palliative care specialist is not on the hospital staff. The sample consisted of the registered nurses who work either of the two wards. A total of 31 nurses met the criteria, however only 10 of the nurses were selected for participation. The data was collected with the tool developed by Ferrell and

McCaffery the (NKARSP) or also known as the Nurses' Knowledge and Attitudes Survey Regarding Pain. The test-retest reliability has been established at $r > 0.80$ according to Ferrell and McCaffery (2008). The NKASRP has four subscales: pain intervention, pain assessment, pain knowledge, and pain medication. The results showed that there is a deficit in knowledge and attitudes related to pain management. The conclusion revealed that the PMP was effective in helping to expand the nurses' pain knowledge and attitudes.

In a study completed by Gunnarsdottir and Gretarsdottir (2011), the purpose was to provide a comprehensive overview and evaluation aimed at nurses to improve pain management. The background revealed that pain remains a problem and is being inadequately managed. Pain continues to be the main reason that patients are seeking healthcare. Under treatment of pain remains a global problem whether it be cancer, non-cancer, or chronic pain. Barriers exist that prevent adequate pain management such as: lack of commitment and resources to pain management, lack of knowledge among health care professionals, and misconceptions among patients and their family members about pain management. Interventions that will help with pain management include training programs and continuing education aimed at the nurses for the purpose of improving pain management. The studies included were either randomized controlled trials or quasi experiments with a control group. Computerized searches using Medline and PubMed and key words pain and education were used to gather information. The patient population included cancer patients, medical surgical patients, and pediatric patients. The setting included various hospitals and included numerous countries such as the USA, Canada, China, France, Greece, the Netherlands, and Sweden. The sample included

nurses, physicians, patients, and family members. The findings showed that only a few studies have been completed that show the continuing education programs are beneficial in improving pain management. And only a few of those studies were the patient outcomes actually measured. It is vital in healthcare that randomized controlled studies are completed to improve pain management for patients; however continuing education programs are costly. A strength is that the programs are beneficial and effective and a weakness is there are not that many studies completed.

Descriptive Correlational Study

In a study by Kjallman and Norbergh (2013), the purpose was to investigate the opinions of registered nurses regarding pain and the assessed need for pain medication in the elderly. Studies showed that the elderly patients experienced pain on a daily basis and that one-fourth of the patients did not receive pain medication (Kjallman & Norbergh, 2013). The study consisted of two patients with the same numerical pain rating, and the same vital signs, one smiling and the other grimacing. Three questions followed the scenario regarding pain management. A total of 128 nurses received the questionnaire and 56 participated. Data was collected by use of SPSS and descriptive analysis was performed. The results showed that the sample consisted primarily of woman, 52 woman and four males, with the average age of 46.8, (SD 9.18), and the average years worked as a registered nurses was 18.28 years (SD 10.6). The results also revealed that nurses with more experience did not give adequate pain medication to the smiling patient which was not within the hospitals recommendations. Nurses with > 10 years of experience were less sensitive to patients in pain and nurses with < 10 years' experience were more sensitive to patients in pain. The conclusion showed that communication regarding pain

is important for the assessment of pain, and nonverbal cues are just as important as verbal reports of pain. This study concluded that there continues to be a further need for research on factors that can decide the registered nurses opinions on the patient's pain.

In a study by Voshall, Dunn, and Shelestak (2012), the purpose was to examine nursing faculty knowledge and attitudes in pain management. The empirical findings suggested that pain management continues to be a challenge in nursing. Nurses' education in pain management, experience, and length of time as a nurse all affect the knowledge of pain management (Voshall et al., 2012). A descriptive correlational study was used for this research study. The sample consisted of 16 universities and colleges faculty members from associate level to baccalaureate level programs. The Knowledge and Attitudes Survey Regarding Pain (KASRP) tool was used to evaluate the faculty's knowledge and attitudes regarding pain. The data was analyzed with the use of SPSS and descriptive statistics was used. The level of significance for each test was 0.05. The results showed that 188 surveys were sent to 16 nursing schools and 96 surveys were sent back to the researcher. The faculty demonstrated having an adequate knowledge in pain assessment but showed weakness in pain interventions and medications. In conclusion, more continuing education may be needed in regards to pain management for older and more experienced nurses to feel comfortable in this content area than younger less experienced nurses. The nursing curricula needs to improve the education related to pain management based on evidence based practice.

In a study by Ware, Bruckenthal, Davis, and O'Conner-Von (2011), the purpose was to determine the educational needs and barriers of advocacy for patients experiencing pain management specific to members of American Society for Pain Management

Nursing (ASPMN). Specifics included: identify members pain management advocacy activities, identify advocacy roles of pain management nurses and the willingness to expand their current role, identify members educational needs, and identify barriers related to advocacy (Ware et al., 2011). The sample consisted of 188 ASPMN members or about 20% of the members. The method consisted of a descriptive correlational study. The instrument used was a survey developed by the committee members of the ASPMN. The instrument measured four domains of advocacy using a Likert scale. These included: personal advocacy, public awareness, the nurses perceptions about advocacy, and knowledge and skills related to advocacy. The data analysis was entered into SPSS and descriptive statistics was used to measure the data. The findings revealed that most of the participants were active in personal advocacy and would ask the physician as needed for pain management re-evaluation, and the participants were not as active in public awareness advocacy. The participants felt that they were strong advocates for patient's pain management, and showed the weakest areas in promoting public awareness regarding pain management. Implications for the future include the ASPMN developing a continuing education course online for nurses to help bridge the gap between knowledge and interventions.

In a study by Black et al. (2011), the purpose was to examine the pain experiences and quality of life in older patients newly admitted to hospice. The research study had several research questions that were examined. The first, what is the experience of pain, pain severity, and pain interference in older adults with cancer in hospice. The second, what is the experience of non-pain symptoms and overall quality of life for adults receiving hospice care? The third question, is there a change in pain, pain severity, pain

interference, non-pain symptoms, and quality of life and symptom control of adult patients in hospice care? The fourth question, what is the relationship between pain and non-pain symptoms, quality of life, and symptom control in older adults receiving hospice care? And the final research question, does a relationship exist between pain severity, non-pain symptoms, quality of life and symptom management following an admission to hospice care? The method used was a descriptive, correlational design. Questions were answered concerning pain, pain severity, and non-pain symptoms that could affect the quality of life of older adults receiving hospice care in their home (Black et al., 2011). The sample consisted of a total of 435 patients who were eligible to participate, however only 194 (22%) agreed to participate, and 341 refused participation. A few reasons for refusing to participate included: health issues were too severe, lack of interest, patient being too tired or actively dying, patient confusion, and unable to speak English. The data was collected by having the patients or their health proxy complete a telephone interview the first 72 hours of the hospice admission and again in two weeks. Patients or their health care proxy were asked to complete the Brief Pain Inventory (BPI) and the Brief Hospice Inventory (BHI) during the first two weeks of the hospice admission. The BPI is a pain measurement tool that assessed pain location, intensity, and history. The tool was intended for the use of cancer patients however, palliative care patients can benefit from this tool as well. The BHI is a tool used to measure outcomes of hospice patient's specific to pain and non-pain symptoms and quality of life. The data analysis was obtained using SAS software, and the results showed that pain rating decreased from the first interview to the second interview, and the reports of pain were associated feelings of anxiety, fatigue, quality of life, comfort, and overall symptom

control. In conclusion, the findings of this research study supported that patients with cancer experience pain and other non-pain symptoms that can affect their overall quality of life.

Nurses Attitude and Knowledge Regarding Pain Survey Tool

In the study by Al-Shaer, Hill, and Anderson (2011), the purpose was to determine the nurse's knowledge regarding pain assessment and management. In the clinical settings nurses are vital in pain assessment. The nurses need to have the knowledge on how to manage the patient's pain. The background discussed that several studies have used the Nurses Knowledge and Attitude Survey Regarding Pain, and findings suggested that the nurse's attitude and knowledge can impact the way a patient's pain is managed. There still is a lot of confusion and misunderstandings regarding pain medications specific to opioids. The study was completed using a non-experimental descriptive design, 129 registered nurses participated and the tool used was the NKAS. The data was collected and entered into SPSS and descriptive statistics was used to describe the sample. Independent t-test and one way variance were used to determine the difference in the knowledge scores. The Chi-square test was used determine the difference in variables. The level of significance was $p < 0.05$. The results did not show any significance in knowledge scores. In conclusion, nurses continue to show inadequacy in pain management knowledge and these nurses may not be prepared to take care of patients in pain. Nurses also need to refrain from being judgmental and base their pain management on the patients self-report. This study helped bring the question up if nursing schools need to have their pain management curricula analyzed to make sure it is preparing future nurses to deal with pain management issues.

In this study by Mocerri and Drevdahl (2012), the purpose was to investigate the knowledge and attitudes regarding pain of the nurses who work in the emergency department. A descriptive design was used for this study. The data was collected using the tool designed by Ferrell & McCaffery, the Knowledge and Attitudes Survey Regarding Pain to assess the knowledge and attitudes of pain from emergency room nurses. The sample and setting consisted of five hospitals and 365 nurses working in the emergency room, however only 91 participated in the survey. The results revealed the total KASRP mean score was 76%. There was not any significance in the nurse's age, education, years of experience, or total number of years working in the emergency room. In conclusion, pain remains one of the highest reasons a patient visits the emergency room, and nurses need to have the knowledge regarding pain management and the use of opioids to make a successful pain assessment. This study revealed that patients are being under prescribed pain medication in the emergency room and could benefit from further education related to pain management.

In the study by Duke, Haas, Yarbrough, and Northam (2013), the purpose was to determine the knowledge and attitudes of student nurses and faculty in the baccalaureate program regarding pain management to see if the nursing curricula content was adequate enough. Pain has been a hot topic for a while now but it continues to be inadequately addressed. The nursing faculty is in a perfect position to address the problem with the nursing students who are the future nurses. The sample for this descriptive study consisted of junior and senior nursing students at a University in Texas. The faculty was also allowed to participate. The instrument used was the Knowledge and Attitudes Survey regarding Pain which assessed the knowledge and attitudes of nurses towards pain

management. The test-retest reliability has been established at $r > 0.80$. The results showed that 292 surveys were sent out and 182 were returned. A correlation was found between the correct response and level of education. Senior students only scored 68% (SD 6.8) while faculty only scored 71% (SD 13). Most of the information missed was related to the knowledge of medications. This study revealed that a deficit between the faculty and the students of what is being taught and what is being retained needs to be re-examined. More research is needed in this area. Curriculum may need to be changed so the faculty is teaching the most accurate pain management information, and new graduates need to be assessed with the knowledge and attitudes regarding pain as well.

In the study by Stanley and Pollard (2013), the purpose was to examine the level of knowledge of pediatric pain management and the attitudes of the nurses regarding pain management. Pain in children is treated just the same as pain in adults. Children still experience pain and it remains undertreated and improperly assessed. A few reasons that pediatric pain may go untreated include several myths: children do not feel pain the same way adults do, lack of pain assessment, misunderstanding of pain, lack of knowledge regarding treatment, assessing the pain takes too much time in pediatric patients, and the fear of respiratory depression and addiction. This study reported that children overrate their pain by 55-90% (Stanley & Pollard, 2013). The methodology for this study consisted of a cross-sectional correlational design in a convenience non-probability sample of pediatric nurses from two hospitals in North Carolina. The participating nurses had to complete two instruments, the Pediatric Nurses Knowledge and Attitudes Survey Regarding Pain and the Nurses Self-Efficacy in Managing Children's Pain. Surveys were distributed to the floors where the nurses worked and a locked box was placed in the

manager's office for confidentiality when the surveys were returned. Participants had four weeks to complete the surveys. A total of 60 packets were delivered and 26 were returned for a return rate of 43.3%. The data was analyzed using SPSS software and descriptive and inferential statistics were used. The t-test was used to measure the mean scores of the level of knowledge and level of self-efficacy. The significance for the study was $p < 0.05$. The findings concluded that 25 of the nurses data were used, 13 nurses from the western part of North Carolina and 12 nurses from the southeastern part of North Carolina. The majority of the participants was female (92%), worked full time (84%), and had an associate degree (52.4%). The others had bachelor's degree (42.9%) and one had a diploma in nursing (4.8%). In conclusion, this study showed that pediatric units could benefit from additional education provided on pain management. For future research, there needs to be an implementation on pediatric pain management education programs and training programs.

Mixed-Method Experiment

In the study by McNamara, Harmon, and Saunders (2012), the purpose was to assess the effectiveness of acute pain care programs in improving the nurse's knowledge and attitudes concerning postoperative pain management. The background revealed that patients with postoperative pain continued to be poorly managed. One of the reasons for this could be lack of knowledge and training programs related to pain management. This study concluded that a lack of education regarding pain management, inaccurate textbook information, and inadequate knowledge regarding pain are barriers to caring for patients experiencing pain. It has been proven that educational programs help to improve the nurse's knowledge surrounding pain. The methods used were a mixed method

experimental approach to examine the nurse's knowledge and attitudes of an educational program concerning pain assessment. This type of experiment allowed for the participants to be examined before, immediately after, and six weeks post course completion. There were 59 nurses that attended the course and they were given an 18-item questionnaire related to pain management. The questionnaire was administered just before the course, immediately after the course, and six weeks after the course. The data was entered into SPSS and descriptive statistics was used to translate the data. The results showed that the educational program intervention was successful and helped to improve the nurses knowledge and attitudes towards pain management and assessment ($p < 0.01$). In conclusion, this study abetted to determine that educational programs are beneficial in improving patient's pain management. Despite the interventions in place, patients continue to have postoperative pain. Ongoing pain education is essential in the clinical setting.

In a study by Naveh, Leshem, Dror, and Musgrave (2011), the purpose was to examine pain management including satisfaction, severity, and barriers related to pain management among cancer patients in a hospital in Israel. Cancer pain continues to be a problem worldwide so the oncology nurses began to develop improvement programs to improve cancer pain. A descriptive, cross-sectional, correlational study was completed in a large teaching hospital in Israel specific to the oncology unit. A total of 144 patients participated in the study from hematology, oncology, and bone marrow transplant units. Participation guidelines were that the patient must be 18 years of age or older, speak Hebrew, have a cancer diagnosis, and have had pain within the past 24 hours. Instruments used in this study were the Revised American Pain Society-Patient Outcome

Questionnaire (APS-POQ) the Barriers Questionnaire-Short Form (BQ-SF) and the Demographic Data Questionnaire. The APS-POQ asked three questions regarding pain severity, pain now, worst pain and least pain after pain medication, and was scored zero meaning no pain and ten being the worst pain. The questionnaire was used in inpatient and outpatient settings of the hospital. The BS-SF measured patients concerns regarding reporting pain and the use of analgesics. The demographic data included age, gender, marital status, place of birth, religion, and religiosity. Research nurses approached the appropriate patients for data collection. Patients who were actively dying, unconscious, and unable to speak Hebrew were not approached. The data was analyzed using descriptive statistics. The results showed that most of the participants were married, Jewish, and were educated beyond high school. The pain severity results showed that 77 patients (65%) reported that they received their pain medication within 15 minutes or less when ask for it, 21 patients (18%) never asked for pain medication, and 83 patients (66%) never asked to change their pain medications even if they felt they were not working. The satisfaction with treatment revealed a difference between the patients satisfaction level between the doctors, nurses, and how long they had to wait for their pain medication. Patients who waited an hour or less were more satisfied with treatment than patients who waited an hour or longer for their medications. Barriers related to pain management included fear of addiction, and patients wanting to save the pain medication for fear that pain may get worse. In conclusion, this study revealed that cancer patients pain severity and their understanding of outcomes may encumber pain relief. For future nursing implications, increasing patient education related to barriers could help to manage pain relief.

Cross Sectional

In the study by Wang and Tsai (2010), the purpose was to explore the nurses' knowledge and barriers regarding pain management in intensive care units in Taiwan. The background revealed that pain remains a major issue even in the ICU. Patients are even at higher risk for pain being undertreated due to being intubated or unconscious. Nurses need to have the proper knowledge and skills regarding pain management to be able to effectively care for these patients. The design for this study was a cross-sectional study. The setting was from 16 different hospitals located in Taiwan. The nurses had to be 18 years or older and currently working in the ICU. The research instruments used was the Twain version of Nurses Knowledge and Attitudes Survey (NKAS-T) and the barriers to pain management using a research developed scale that was specific to this study. The nurse's knowledge regarding pain management was measured. The perceived barriers and pain knowledge was analyzed using SPSS and descriptive statistics was used. The results showed that of the 378 questionnaires sent out, 370 were returned, with a response rate of (97.9%). Most all participants were female and held a bachelor's degree or above, however most of the participants have never had any formal training in pain management but admitted that they take care of patients in pain on a daily basis. The results also showed that the nurses had a poor perception of pain management, and the most common listed barrier was the nurses said they needed a doctor's order for pain medication. The knowledge varied by education level, hospital, and clinical competence level. In conclusion, the results showed a strong need to increase pain management education programs to the ICU nurses in Taiwan. This research study is relevant to clinical practice in the fact that pain knowledge and pain barriers should be addressed in the ICU's in

Taiwan. Ongoing pain education courses are a must which include topics such as: pain assessment, analgesia, effects and side effects of pain medication, and pain symptoms.

In a study by Barnett, Mulvenon, Dalrymple, and Connelly (2010), the purpose was to investigate the nurses' current knowledge, attitudes, and practice patterns regarding titration of opioid infusions at the end of life. The method used for this study was a cross-sectional descriptive survey that used quantitative and qualitative questions. The settings were two community based hospitals and an academic medical center. The instrument used for this research was a survey that was designed by nurses who are experts in this content area. The survey consisted of 20 questions, 16 of those were quantitative and four were qualitative. The results revealed that 1,089 nurses received the survey however, only 181 nurses participated in the survey from the three area hospitals, (91%) were female, and 40 years old, and had been a nurse for 13 years. The majority of the nurses (78%) felt that comfortable titrating opioids however, only one of the knowledge questions was answered correctly from the survey at (68.5%). When asked if the hospital had a policy for titrating opioids, more than half of the nurses responded that they did not know (56.4%). The outcomes of this study show that nurses who are providing care to patients at the end of life could benefit from further education regarding opioid titration. Education for end of life care can be achieved through pain assessment and management. This study revealed that the nurse's knowledge for providing optimal pain relief is not adequate. For future concerns it is vital that evidence based research be made available to the bedside nurses.

In a study by Al Khalaileh and Al Qadire (2012), the purpose was to explore barriers to cancer pain management among the Jordanian nurses. As expected, pain

continues to be a problem for most cancer patients. One of the suspected reasons could be several different barriers related to pain management. A few of the barriers include: poor communication between nurses and physicians, lack of pain assessment, and lack of team work. The research method used was quantitative with a cross-sectional design. Data was collected from nurses working on three different oncology units at three different hospitals in Jordan. A total of 150 questionnaires were sent out and 96 nurses participated in the survey. Instruments used were a demographic sheet that asked about age and education and a barrier questionnaire that was used to measure optimal pain management. This survey consisted of 27 Likert type questions. The data was entered into SPSS and descriptive statistics was used to describe the questions. There was a high level of barriers among the nurses with a mean score of (2.5). The results showed that nurses had a negative attitude in regards to cancer pain; however the negative attitudes could be in direct relation to a lack of knowledge and education regarding this topic. In conclusion, cancer pain remains undertreated, and many barriers exist with the nurses in Jordan such as, lack of knowledge, thought of medications causing more harm than good, and negative attitudes regarding cancer pain. It is pertinent that regular pain medication be added in the nursing school curricula in Jordan and that frequent pain education courses be offered to the oncology nurses.

In a study by Monroe, Carter, Feldt, Tolley, and Cowan (2012), the purpose was to be able to assess cancer pain in patients with a diagnosis of dementia at the end of life. Patients with advanced dementia are unable to report pain like most patients, so nonverbal communication from the patients is vital. Knowing how patients with dementia experience pain is important for any of the healthcare members helping to provide care

for this patient. The design was a cross-sectional study using chart audits from 2009 from patients with a diagnosis of dementia. The sample consisted of 11 nursing homes including profit and nonprofit. However, nine agreed to participate, two were profit and seven nonprofit, yielding participation rates of 82%. Records of patients with a diagnosis of dementia, Lewy body dementia, vascular dementia, Alzheimer's, or a combination that had also died from cancer were evaluated. A total of 48 charts were examined. The instruments included the Discomfort Behavior Scale (DBS) and the Cognitive Performance Scale (CPS). The DBS measures pain based on direct observation of behavior and the CPS measures cognitive ability, such as eating, short term memory, and decision making skills. The results showed that patients with dementia were associated negatively with pain behavior. The survey examined how much narcotic pain medication the patients had over the last two weeks of life, and it revealed that patients with severe dementia received less opioids. In conclusion, methods used to assess for pain in patients with dementia needs to be improved. Patients with dementia have less pain behaviors, and as the healthcare professionals we need to be educated on the behavioral indicators to pick up on including the nonverbal communication signals that the patients are sending.

Conceptual Framework

In a study by Skalski, DiGerolamo, and Gigliotti (2006), the purpose was to identify and categorize stressors in five different client populations using the Neuman's System Model based studies. The Neuman System Model was developed in 1970 as an educational model but has served as a framework to unify nursing knowledge. The model proposes that the client is in interaction with the intra, inter, or extra-personal singularities. The singularities are known as stressors which can annex the client's

normal state of health known as the normal line of defense; however the flexible line of defense can fight off the stressors. The flexible line of defense has five variables including: spiritual, developmental, sociocultural, physiological, and psychological. A stress response occurs when the line of defense is weak and becomes occupied. One of the goals in nursing is to help the client strengthen their lines of defense with the outcome of reasonable health. The review method includes Cooper's (1989) five stage integrative review using: problem formulation, data collection, data evaluation, analysis and interpretation, and dissemination. Research literature from 1987-2005 was reviewed and a total of 87 journals were published, and 13 of the 87 were appropriate for stressor studies. The findings revealed that data was mostly collected from interviews and that categorization of the intra, inter, and extra-personal was present. The stressors existed in the five populations that were studied. They included: cancer survivors who reported a few stressors to be body image concerns, lack of support, and insurance concerns. Care receivers reported stressors to include anxiety and lack of support from family and friends. Patients in the intensive care units reported lack of patience, nurse and doctors who do not talk to you but over you, and physical discomforts. Parents whose children are undergoing day surgery reported stressors to include loss of control and separation anxiety, and caregivers reported stressors to include financial concerns, lack of support from family and friends, and role fatigue. In conclusion, the information gained through this middle range theory of the Neuman System Model showed that the caregiver role could be further tested for future knowledge.

Strengths and Weakness of Literature Review

During the literature review some of the strengths noted were clinicians noticing that there needs to be an increase in the research, technologies, and education related to pain management and end of life care. Clinicians are also noticing that there needs to be a bridge made between the gap of knowledge regarding pain management and the nurses interventions of assessing for pain and administering the pain medication ordered. Clinicians also noticed that evidence based research needs to be made more available to the nurses at the bedside.

A few of the most noted weaknesses included nurses have difficulty dealing with their own personal inner conflicts regarding administering pain medication, deficit of knowledge and attitudes regarding pain, lack of communication among the nurses and physicians, dealing with physicians who may not be comfortable prescribing the higher doses of pain medication, and improving the pain assessment skills for pediatric and dementia patients. The nursing curricula in nursing schools was also noted to need improvement, as faculty are not covering the content in depth as they should be to prepare the new graduates for the workforce regarding pain and end of life care.

Summary

Examining the research articles that associated the nurse perceptions at the end of life care and pain management revealed that there is still a lot of education that needs to be done regarding pain management at the end of life. Patients are still dying in pain, and these patients remain a challenge for nurses to care for. The nurses' knowledge and attitudes regarding pain management can impact the care greatly. The relationship between the nurse and physician also affects pain management. Nurses are seen as key

figures in pain management, they are at the bedside with the patient the entire duration of the hospital stay (Blondal & Halldorsdottir, 2009). As the research has already stated, pain continues to be one of the main reasons patients seek healthcare (Gunnarsdottir & Gretarsdottir, 2011). Pain remains inadequately assessed and managed, and in order to improve pain management nurses could benefit from continuing education programs set up to target pain at the end of life care. Depending on the individual situation with each patient depends on the answer if nurses feel adequate pain medication is being administered at the end of life care. The literature review did determine that nurses are still requiring education on this topic even after determining that they felt competent in pain management.

CHAPTER III

Methodology

The purpose of this study was to investigate the nurses' knowledge and attitude of nurses regarding pain management during the end of life. Are patients being adequately medicated with pain medication at the end of life? The methodology will help to better explore these findings.

Implementation

This section discussed how the research was conducted. First, a research question was developed based on a current need the researcher had noticed in the nursing field. Then the IRB application was completed and approved. The sample was selected using the snowball method. Nurses were selected to participate depending on their experience of end of life care and pain management. A consent form (Appendix A) was sent out with the Knowledge and Attitudes Survey Regarding Pain Management (KASRP) (Appendix B) as well as the demographic form (Appendix C). The nurses were asked to complete the survey and demographic form, and by sending in the forms, consent was given. Nurses with various background experience participated in the survey from hospice and home health care agencies, acute care, and long term care facilities, and nurse educators, all of whom had patients experiencing pain at the end of life.

Setting

The data for this study was collected from various nurses in different locations including two local hospitals for the acute care, long term care facilities that offer skilled services and rehab services, hospice and home health care settings, as well as nurses from the community college setting who have dealt with patients at the end of life.

Sample

The sample consisted of nurses who were randomly selected using the snowball method through personal communication. Nurses were chosen by having had experience in taking care of patients at the end of life who also had pain management issues. The participants had two weeks to complete the survey and forms and mail back to the researcher.

Design

The design is a quantitative study and the time frame allowed was two weeks for the participants to complete the surveys and demographic forms and mail back to the researcher. An instrument designed by Ferrell and McCaffery (2012), which is a 37-item questionnaire that surveys the nurses' knowledge and attitudes regarding pain management. Surveys were distributed to a minimum of 20 nurses and participation was entirely voluntarily.

Protection of Human Subjects

Each participant was given a copy of the consent form accompanied by the KASRP survey. Participation was entirely voluntarily and no names were attached to the surveys. There was not any personal contact with any patients during this study. The completed forms will be kept in a secured double locked filing cabinet at the university

per the IRB guidelines. Data will only be viewed by the researcher and data analyst. Any information that may be linked to the participant and the study will not be included in the reports for the data collection of this study.

Instruments

The instrument used for this study and data collection was the Nurses Knowledge and Attitudes Survey Regarding Pain (KASRP). The validity of this instrument was established by pain experts and has been reviewed over several years. The content of this instrument has been derived from current standards pain management such as the American Pain Society, World Health Organization, and the National Comprehensive Cancer Network pain guidelines. The test-retest reliability was established ($r > .80$) by repeat testing in a continuing education class of staff nurses ($N=60$). Internal consistency reliability was established ($\alpha > .70$) with items reflecting both knowledge and attitudes domains (Ferrell & McCaffery, 2012).

Data Collection

Data required for this study included a demographic form and the KASRP survey. Data was collected by surveying 26 nurses. A total of 30 surveys were distributed and a total of 26 were returned. The snowball method was utilized to collect data; participation was entirely voluntarily. Forms were mailed back to the researcher via a self-addressed and postage paid envelope for data analysis. Data was collected by the researcher of this study during the early months of spring semester of 2014.

Data Analysis

Data was entered using the computer software program SAS version 9.3.

ANOVA and descriptive statistics using the mean, mode, average, percentage and t-test was used to describe the data. A professional statistician entered the data.

Summary

The purpose of this study was to describe the nurses' knowledge and attitudes regarding pain management to determine if the existing literature supports the research question of what is the nurses' knowledge and attitude of nurses regarding pain management during the end of life. This chapter described the research methodology utilized for this study. Analysis and findings are discussed in detail in chapter four.

CHAPTER IV

Results

The purpose of this study was to investigate the knowledge and attitude of nurses regarding pain management during the end of life. Are patients being adequately medicated with pain medication at the end of life? This is a quantitative study to investigate the effectiveness of registered nurses' knowledge and attitudes regarding pain management at the end of life. The results will be presented in graphs, tables, and as discussion. The discussion of the findings and presentations are given with respect to each of the research questions and presented to facilitate the readers understanding.

Sample Characteristics

The sample size for this research consisted of registered nurses working in acute care setting such as intensive care units, medical-surgical and telemetry units, long term care facilities including the rehabilitation units, hospice and home health care settings, as well as nurse educators working in the community college setting. Thirty surveys were hand delivered using the snowball method and 26 were returned. None of the surveys had to be withdrawn and the researcher was able to use all 26 that were returned. The respondents were given a copy of the informed consent form and a copy of the demographic form and also a copy of the Knowledge and Attitudes Survey regarding pain. The data received was aggregated, coded, and entered into SAS version 9.3 by a professional statistician. For the data analyses, descriptive statistics and ANOVA was used to evaluate the results.

Major Findings

The age group of the respondents range from 21-30 years of age 30.77% or eight respondents, 31-40 years of age 19.23% or five respondents, 41-50 years of age 19.23% or five respondents, 51-60 years of age 26.92% or seven respondents, and 61-70 years of age 3.85% or one respondent. Most of the surveys were completed by medical-surgical nurses at 34.62%, hospice nurses 15.38%, nursing education 15.38%, intensive care nurses 11.54%, long term care nurses 7.69%, telemetry nurses 11.54%, and the lowest respondents were home health listed as other at 3.85%. The current employment setting of the respondents are as follows according to the data. Acute care 46.15% or 12 respondents, home care 7.69% or two respondents, long term care 15.38% or four respondents, nursing education at the community college level 19.23% or five respondents, and hospice listed as other 11.54% or three respondents. (Table 1)

Table 1

The Current Employment Setting of the Respondents

Employment	Frequency	Percent
Acute Care	12	46.15
Home-care	2	7.69
Long-term Care	4	15.38
Nursing Education Community College	5	19.23
Other: Hospice	3	11.54

The highest degree held by the respondents was a bachelor's degree 46.15% or 12 respondents and associate degree 34.62% or nine respondents and master's degree 19.23% or five respondents. (Table 2)

Table 2

The Highest Degree of the Respondents

Degree	Frequency	Percent
Associate Degree	9	34.62
Bachelor's Degree	12	46.15
Master's Degree	5	19.23

The statistics show that 42.31% or 11 of the respondents have been practicing as an RN for 10 years or less, respondents practicing 11-20 years was 23.08% or six respondents, 21-30 years 19.23% or five respondents and 31-45 years 15.38% or four respondents. (Table 3)

Table 3

The Years of Practice of the Respondents

Practice	Frequency	Percent
1-10 years	11	42.31
11-20 years	6	23.08
21-30 years	5	19.23
31-45 years	4	15.38

The data revealed that most of the respondents worked 21-30 hours a week 57.69% or 15 respondents, 15.38% or four respondents, worked one to 20 hours a week, and 41 or more hours a week was 26.92% or seven respondents. (Table 4)

Table 4

The Number of Weekly Hours of Work of the Respondents

Weekly Hours	Frequency	Percent
1-20 hours	4	15.38
21-30 hours	15	57.69
41 or more hours	7	26.92

The race of the respondents revealed 92.31% or 24 of the respondents were Caucasian, 3.85% or one respondent was Hispanic and 3.85% or one respondent was listed as other. (Table 5)

Table 5

The Race of the Respondents

Race	Frequency	Percent
Caucasian	24	92.31
Hispanic	1	3.85
Other	1	3.85

The respondents were ask how many patients they care for weekly and provide pain management the data revealed that 76.92% or 20 respondents care for one-20 patient's a week, 7.69% or two respondents listed that they care for 21-30 patients and week and 15.38% or four respondents reported that the question was not applicable due to their job description. (Table 6)

Table 6

The Number of Patients Weekly Pain Management of the Respondents

Pain Management	Frequency	Percent
1-20 patients	20	76.92
21-30 patients	2	7.69
No patients or Not Applicable	4	15.38

The respondents were also asked how many patients do they care for a week that they provide end of life care for and the data revealed that 80.77% or 21 respondents reported that they care for one to 15 patients a week, and 3.85% or one respondent reported that they care for 21 or more patients a week at the end of life and 15.38% or four respondents reported that the question was not applicable due to their job description. (Table 7)

Table 7

The Number of Patients Weekly End of Life Care of the Respondents

End of Life Care	Frequency	Percent
1-15 patients	21	80.77
21 or more patients	1	3.85
No patients or Not Applicable	4	15.38

The statistics revealed that the nurses surveyed show knowledge about pain management. The p-value ($p < 0.05$) showed to be significant for this study and the sample $n=26$. The p-value is for the population proportion of correct (favorable) responses.

Analyses of the first 21 questions were true/false. Next we consider the following statistical hypothesis. H_0 is the null hypothesis and H_a is the alternate hypothesis.

(Table8)

Let H_0 : The respondents are purely guessing (the respondents have no knowledge in pain management)

H_a : The respondents are more knowledgeable about pain management.

OR

Let H_0 : The respondents are purely guessing (they have no knowledge in pain management)

H_a : The respondents are less knowledgeable about pain management.

In terms of symbols

$H_0: p = 0.5$ (the respondents have no knowledge in pain management)

$H_a: p > 0.5$ (the respondents are more knowledgeable about pain management)

$H_0: p = 0.5$ (the respondents have no knowledge in pain management)

$H_a: p < 0.5$ (the respondents are less knowledgeable about pain management)

Table 8

Hypothesis Testing Questions 1-21

Q	Frequency		\hat{p} (Sample proportion)	Test Statistic	Exact 95% Confidence Interval		One-sided p-value	Conclusion
	F	T			Lower Limit	Upper Limit		
Q1	25	1	0.9615*	4.7068	0.8036	0.999	<.0001	reject H_0 (the respondents are more knowledgeable about Q1)
Q2	23	3	0.8846*	3.9223	0.6985	0.9755	<.0001	reject H_0 (the respondents are more knowledgeable about Q2)
Q3	22	4	0.8462*	3.5301	0.6513	0.9564	0.0002	reject H_0 (the respondents are more knowledgeable about Q3)
Q4	2	24	0.9231**	4.3146	0.7487	0.9905	<.0001	reject H_0 (the respondents are more knowledgeable about Q4)
Q5	15	11	0.5769*	0.7845	0.3692	0.7665	0.2164	fail to reject H_0
Q6	13	13	0.5*	0	0.2993	0.7007	0.5	fail to reject H_0
Q7	0	26	1**	5.099	0.8677	1	<.0001	reject H_0 (the respondents are more knowledgeable about Q7)
Q8	15	11	0.5769*	0.7845	0.3692	0.7665	0.2164	fail to reject H_0
Q9	4	22	0.8462**	3.5301	0.6513	0.9564	0.0002	reject H_0 (the respondents are less knowledgeable about Q9)
Q10	21	5	0.8077*	3.1379	0.6065	0.9345	0.0009	reject H_0 (the respondents are more knowledgeable about Q10)
Q11	25	1	0.9615	4.7068	0.8036	0.999	<.0001	reject H_0 (the respondents are more knowledgeable about Q11)
Q12	26	0	1*	5.099	0.8677	1	<.0001	reject H_0 (the respondents are more knowledgeable about Q12)
Q13	26	0	1*	5.099	0.8677	1	<.0001	reject H_0 (the respondents are more knowledgeable about Q13)
Q14	0	26	1**	5.099	0.8677	1	<.0001	reject H_0 (the respondents are more knowledgeable about Q14)
Q15	1	25	0.9615**	4.7068	0.8036	0.999	<.0001	reject H_0 (the respondents are more knowledgeable about Q15)
Q16	25	1	0.9615*	4.7068	0.8036	0.999	<.0001	reject H_0 (the respondents are more knowledgeable about Q16)
Q17	22	4	0.8462*	3.5301	0.6513	0.9564	0.0002	reject H_0 (the respondents are less knowledgeable about Q17)
Q18	17	9	0.6538*	1.5689	0.4433	0.8279	0.0583	fail to reject H_0
Q19	24	2	0.9231*	4.3146	0.7487	0.9905	<.0001	reject H_0 (the respondents are more knowledgeable about Q19)
Q20	19	7	0.7308*	2.3534	0.5221	0.8843	0.0093	reject H_0 (the respondents are less knowledgeable about Q20)
Q21	0	26	1**	5.099	0.8677	1	<.0001	reject H_0 (the respondents are more knowledgeable about Q21)

*Sample proportion of False responses

**Sample proportion of True responses

Q Question

 \hat{p} Sample proportion

Questions 22-35 were multiple choice and questions 36 and 37 were case studies.

(Table 9 and 10, Figure 2 and 3). The statistical results are as follows:

Consider the following statistical hypothesis (for Q22-Q35, Q36B and Q37B)

Let H_0 : The respondents are purely guessing (the respondents have no knowledge in pain management)

H_a : The respondents are more (or somewhat) knowledgeable about pain management.

a sample proportion of respondents for the response 'oral'

b sample proportion of respondents for the response 'intravenous'

c sample proportion of respondents for the response 'morphine'

d sample proportion of respondents for the response 'Morphine 10 mg IV'

e sample proportion of respondents for the response 'around the clock on a fixed schedule'

f sample proportion of respondents for the response 'less than 1%'

g sample proportion of respondents for the response 'The patient is experiencing increased pain.'

h sample proportion of respondents for the response 'All of the above'

i sample proportion of respondents for the response 'the patient'

j sample proportion of respondents for the response 'Patients should be individually assessed to determine cultural influences.'

k sample proportion of respondents for the response '5 – 15%'

l sample proportion of respondents for the response '15 min.'

m sample proportion of respondents for the response '1 – 2 hours'

n sample proportion of respondents for the response 'sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued'

o sample proportion of respondents for the response 'Administer morphine 3 mg IV now.'

p sample proportion of respondents for the response 'Administer morphine 3 mg IV now.'

Table 9

Testing Questions 22-35, 36B, 37B

Q	\hat{p} (Sample Proportion)	Test Statistic	Exact 95% Confidence Interval		One-sided p-value	Conclusion
			Lower Limit	Upper Limit		
Q22	0.4231 ^a	2.8437	0.2335	0.6308	0.0022	reject H_0 (the respondents are somewhat knowledgeable about Q22)
Q23	0.8462 ^b	8.2369	0.6513	0.9564	<.0001	reject H_0 (the respondents are more knowledgeable about Q23)
Q24	0.8846 ^c	7.473	0.6985	0.9755	<.0001	reject H_0 (the respondents are more knowledgeable about Q24)
Q25	0.5 ^d	2.9439	0.2993	0.7007	0.0016	reject H_0 (the respondents are somewhat knowledgeable about Q25)
Q26	0.6923 ^e	3.8829	0.4821	0.8567	<.0001	reject H_0 (the respondents are somewhat knowledgeable about Q26)
Q27	0.2308 ^f	0.3992	0.0897	0.4365	0.3474	fail to reject H_0
Q28	0.8077 ^g	6.5672	0.6065	0.9345	<.0001	reject H_0 (the respondents are more knowledgeable about Q28)
Q29	0.7308 ^h	5.6614	0.5221	0.8843	<.0001	reject H_0 (the respondents are more knowledgeable about Q29)
Q30	0.9615 ⁱ	9.7077	0.8036	0.999	<.0001	reject H_0 (the respondents are more knowledgeable about Q30)
Q31	0.8077 ^j	6.5672	0.6065	0.9345	<.0001	reject H_0 (the respondents are more knowledgeable about Q31)
Q32	0.3600 ^k	1.2702	0.1797	0.5748	0.102	fail to reject H_0
Q33	0.6154 ^l	4.3027	0.4057	0.7977	<.0001	reject H_0 (the respondents are somewhat knowledgeable about Q33)
Q34	0.7308 ^m	5.6614	0.5221	0.8843	<.0001	reject H_0 (the respondents are somewhat knowledgeable about Q34)
Q35	0.2692 ⁿ	0.2265	0.1157	0.4779	0.4104	fail to reject H_0
Q36B	0.2692 ^o	0.2265	0.1157	0.4779	0.4104	fail to reject H_0
Q37B	0.3846 ^p	1.5852	0.2023	0.5943	0.0565	fail to reject H_0

Table 10

Descriptive Statistics for Quantitative Responses

Variable	Mean	Standard Deviation	Sample size	Minimum	Maximum
Q36A	6.6153846	2.2816998	26	1	8
Q37A	7.5769231	1.1017469	26	4	8

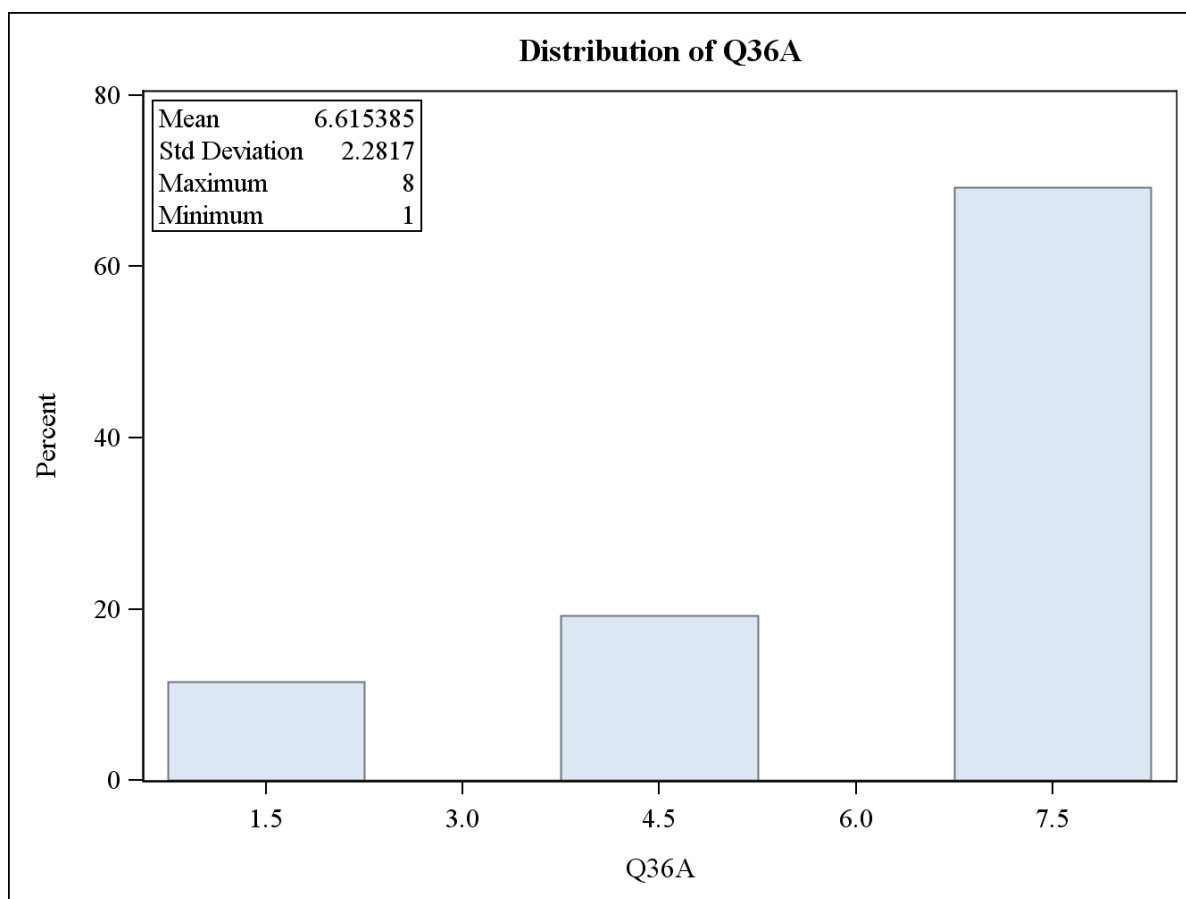


Figure 2. Histogram for the quantitative response variable (Q36A)

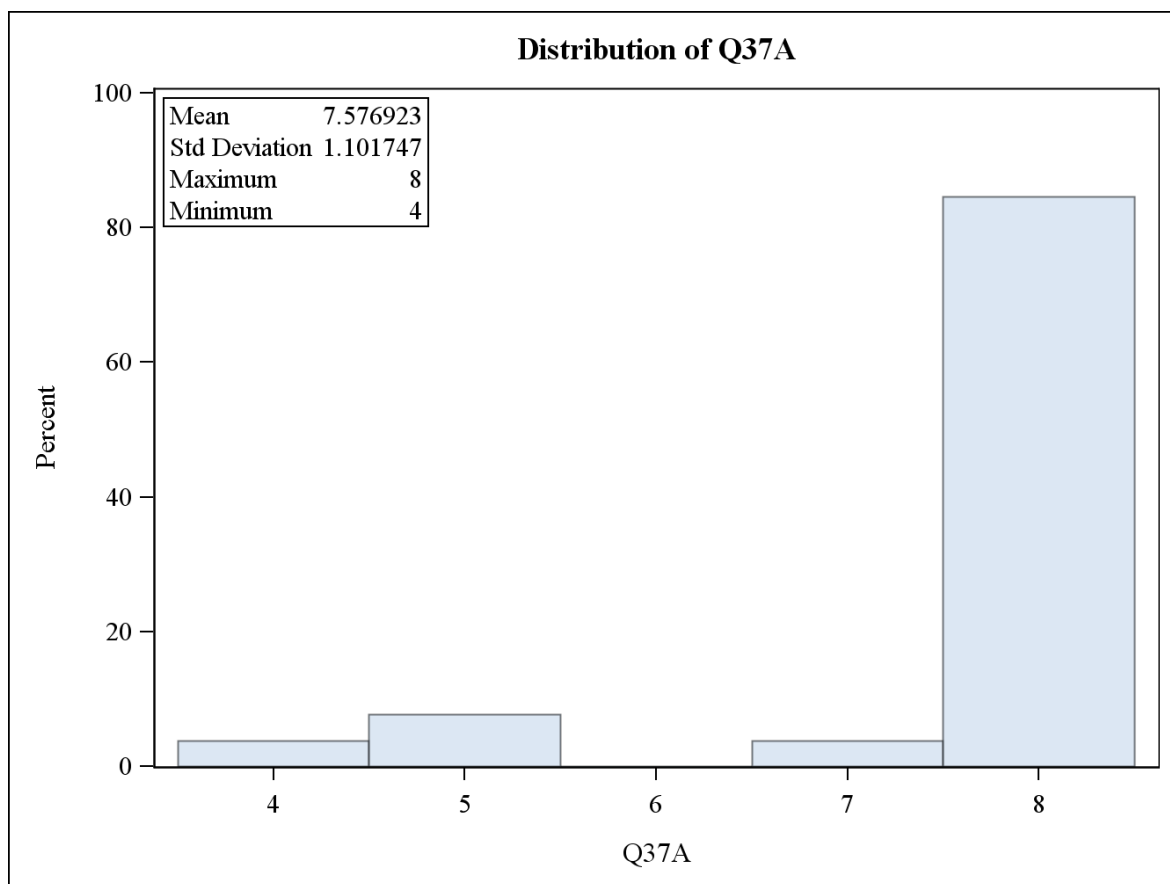


Figure 3. Histogram for the quantitative response variable (Q37A)

Summary

The following conclusions were drawn from the analysis of data. More end of life care education is still needed to continuously improve the quality of life for patients facing death. This study provided descriptive statistical analysis to determine the nurses' knowledge and attitudes regarding pain management at the end of life. The data revealed that even nurses with higher educational degrees could improve in pain management at the end of life for their patients in their care. More education in pain management needs to be added into the nursing school curricula so nurses are better prepared and feel more comfortable giving patients what seems like large doses of opioids for pain relief. The data also revealed that nurses may not administer pain medication if the patient is smiling verses the patient that is grimacing and may document the pain level incorrectly. Nurses need to be reminded that the pain level of the patient is what the patient says it is and the patient is the best source of knowing what their pain is.

CHAPTER V

Discussion

The purpose of this study was to investigate the nurses' knowledge and attitudes regarding pain management during the end of life. Are patients being adequately medicated with pain medication at the end of life? This study revealed that nurses do show competence in knowing when to administer pain medication and have knowledge on pain management but it also revealed that some nurses may not document the patients pain how the patient reports it due to their behaviors at the time of assessment. Nurses need to be reminded that the pain is what the patient says it is.

Implication of Findings

The purpose of this MSN thesis was to determine "An Assessment of Nurses' Knowledge and Attitudes toward End of Life Care Pain Management". The research data and analysis revealed what the perceptions were regarding pain management at the end of life care. The research study consisted of nurses being surveyed on their attitudes and knowledge regarding pain. Data in this research study revealed how the nurse perceives pain management at the end of life care. This study will also help to determine if more education is needed in this area.

The study showed that nurses were knowledgeable regarding pain management; however more education is still needed regarding pain being what the patient says it is. This is in all nursing literature and nurses are educated about this in nursing school as they are beginning their career. The findings also revealed that nurses are less knowledgeable when a patient has been on one opioid and converts to a different opioid that nurses are unsure if the dose will treat the patient's pain. Also, the use of adjuvant

medications in combination with opioids nurses are unsure if these medications will help manage the patient's pain. More education is still needed in this area.

Application to Conceptual Framework

The conceptual framework for this study was guided by Betty Neuman's Healthcare Systems Model. The Betty Neuman model uses a systems approach that focuses on the human needs of protection or relief from stress (McEwen & Wills, 2011). Betty Neuman has defined five variables that retain stability, these include: physiologic, psychological, sociocultural, developmental, and spiritual. The Neuman Systems Model works well for patients who react to certain stressors and cause the line of defense to strengthen (McEwen & Wills, 2011). Stressors can have a direct impact on pain management. The patient is viewed as having a core with protective rings around the core. The core consists of the basic needs such as normal body temperature, response pattern, ego structure, and organ structure. The lines of resistance should decrease the stressor reaction and allow the patient to return to a sense of stability. The normal line of defense included using the five variables and determining how the patient responds to the pain, copes with the pain, and how the pain affects the patient's spirituality. It is the nurse's responsibility to determine what factor such as pain is going to affect the stressors and intervene appropriately. This framework was appropriate for this study and related well because pain is a stressor and effects how the pain will be managed.

Limitations

The possibility of having the sample of nurses from one local area could have caused limitations. Most of the nurses went to the same local community college and the community college has a reputation of having a strong nursing program. Considering all the different areas of employment, the nurses still had a good knowledge base of pain medications and management which was definitely a strength that the thesis helped to reveal.

Implications for Nursing

For future implications, surveying a large sample of nurses from across the state or nation would be an ideal way to see in broad-spectrum how knowledgeable nurses are regarding pain management to patients at the end of life. Also, not setting limits to just registered nurses but surveying licensed practical nurses in this topic could also provide data as well since most of the long term care nurses are licensed practical nurses. There needs to be data that shows they are competent in administering pain medications and managing the pain to patients at the end of life as well.

Recommendations

Nurses in current practice need to be well-educated on how to properly manage pain in patients who are at the end of life. When patients have been given a terminal illness or diagnosis, patients begin to assume they will die in pain. Nurses are key members in the healthcare setting and are a lot of the time the voice of the patient to the physician. There needs to be more obligatory education offered to practicing nurses in all the different types of healthcare settings. Pain needs to be managed not only in acute

care but long term care, home health, and hospice, however it initially begins with having more emphasis placed on in nursing school.

Conclusion

In conclusion, this study helped to determine if nurses had an adequate knowledge regarding pain management to patients at the end of life. The findings revealed that nurses did show knowledge in pain management, however more education is still needed in this area to help nurses document the pain and not let the patient behaviors skew their assessment. Pain is always subjective and it is what the patient says it is regardless if the patient is smiling when the nurse enters the room. Everyone has a different tolerance for pain.

This study would be more reliable if it was conducted across a wider area and included licensed practical nurses, as they need to be just as educated in this topic.

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*Indicates studies included in the meta-analysis

Appendix A
Informed Consent Form

Informed Consent Form for Participation in a Research Study

Research Study Title: An Assessment of Nurses' Knowledge and Attitudes toward End of Life Care Pain Management

Introduction

You are invited to participate in a research study to understand nurses' knowledge and attitudes of pain management during end-of-life care. The study would be beneficial in gaining an understanding of how nurses provide pain management to patients during end-of-life care.

What are the study procedures?

You will be given a questionnaire and demographic form to complete and return to the researcher. Written instructions will be given on how to complete and return the forms. You will be able to fill out the questionnaire at a time convenient and in a familiar environment for you. The process of completing the forms will take approximately 50 minutes to complete.

What are the risks of participating in this research study?

There are no known risks for participating in this study. Participation in this study is entirely voluntary and you may choose to stop participating at any time.

How will my personal information be protected?

The results will be confidential and the ethical rights of the participants will be protected. To ensure anonymity there will be no identifying data collected on the measuring instruments.

Whom do I contact if I have questions about the study?

If at any time you have questions regarding the study, you may contact Amy Davis (student researcher) at 828-448-8473 or Dr. Candice Rome (faculty research advisor) at Gardner-Webb University at 704-406-4365.

Documentation of Consent

I have read this consent form and agree to voluntarily participate in this study. I understand that by submitting the survey and demographic forms, I am providing my informed consent to participate in this study.

Appendix B

Knowledge and Attitudes Survey Regarding Pain



October 2012

The “Knowledge and Attitudes Survey Regarding Pain” tool can be used to assess nurses and other professionals in your setting and as a pre and posttest evaluation measure for educational programs. The tool was developed in 1987 and has been used extensively from 1987 - present. The tool has been revised over the years to reflect changes in pain management practice.

Regarding issues of reliability and validity: This tool has been developed over several years. Content validity has been established by review of pain experts. The content of the tool is derived from current standards of pain management such as the American Pain Society, the World Health Organization, and the National Comprehensive Cancer Network Pain Guidelines. Construct validity has been established by comparing scores of nurses at various levels of expertise such as students, new graduates, oncology nurses, graduate students, and senior pain experts. The tool was identified as discriminating between levels of expertise. Test-retest reliability was established ($r > .80$) by repeat testing in a continuing education class of staff nurses ($N=60$). Internal consistency reliability was established ($\alpha > .70$) with items reflecting both knowledge and attitude domains.

Regarding analysis of data: We have found that it is most helpful to avoid distinguishing items as measuring either knowledge or attitudes. Many items such as one measuring the incidence of addiction really measures both knowledge of addiction and attitude about addiction. Therefore, we have found the most benefit to be gained from analyzing the data in terms of the percentage of complete scores as well as in analyzing individual items. For example, we have found it very helpful to isolate those items with the least number of correct responses and those items with the best scores to guide your educational needs.

Enclosed for your use is a copy of our instrument and an answer key. You may use and duplicate the tool for any purpose you desire in whole or in part. References to some of our studies which have included this tool or similar versions are included below. We have received hundreds of requests for the tool and additional use of the tool can be found in other published literature. We also acknowledge the assistance of several of our pain colleagues including Pam Kedziera, Judy Paice, Deb Gordon, June Dahl, Hob Osterlund, Chris Pasero, Pat Coyne and Nessa Coyle in the revisions over the years. If using or publishing the tool results please cite the reference as “Knowledge and Attitudes Survey Regarding Pain” developed by Betty Ferrell, RN, PhD, FAAN and Margo McCaffery, RN, MS, FAAN, (<http://prc.coh.org>), revised 2012.

We hope that our tool will be a useful aid in your efforts to improve pain management in your setting.

Sincerely,



Betty R. Ferrell, RN, PhD, FAAN
Research Scientist
References:



Margo McCaffery, RN, MS, FAAN
Lecturer and Consultant

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Knowledge and Attitudes Survey Regarding Pain

True/False – Circle the correct answer.

- | | | |
|----------|----------|--|
| T | F | 1. Vital signs are always reliable indicators of the intensity of a patient's pain. |
| T | F | 2. Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences. |
| T | F | 3. Patients who can be distracted from pain usually do not have severe pain. |
| T | F | 4. Patients may sleep in spite of severe pain. |
| T | F | 5. Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases. |
| T | F | 6. Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months. |
| T | F | 7. Combining analgesics that work by different mechanisms (e.g., combining an NSAID with an opioid) may result in better pain control with fewer side effects than using a single analgesic agent. |
| T | F | 8. The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours. |
| T | F | 9. Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics. |
| T | F | 10. Opioids should not be used in patients with a history of substance abuse. |
| T | F | 11. Elderly patients cannot tolerate opioids for pain relief. |
| T | F | 12. Patients should be encouraged to endure as much pain as possible before using an opioid. |
| T | F | 13. Children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parent's assessment of the child's pain intensity. |
| T | F | 14. Patients' spiritual beliefs may lead them to think pain and suffering are necessary. |
| T | F | 15. After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response. |
| T | F | 16. Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real. |
| T | F | 17. Vicodin (hydrocodone 5 mg + acetaminophen 500 mg) PO is approximately equal to 5-10 mg of morphine PO. |

- T F** 18. If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.
- T F** 19. Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.
- T F** 20. Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.
- T F** 21. Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.

Multiple Choice – Place a check by the correct answer.

22. The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is
____ a. intravenous
____ b. intramuscular
____ c. subcutaneous
____ d. oral
____ e. rectal
23. The recommended route administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is
____ a. intravenous
____ b. intramuscular
____ c. subcutaneous
____ d. oral
____ e. rectal
24. Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients?
____ a. codeine
____ b. morphine
____ c. meperidine
____ d. tramadol
25. Which of the following IV doses of morphine administered over a 4 hour period would be equivalent to 30 mg of oral morphine given q 4 hours?
____ a. Morphine 5 mg IV
____ b. Morphine 10 mg IV
____ c. Morphine 30 mg IV
____ d. Morphine 60 mg IV

26. Analgesics for post-operative pain should initially be given
 _____ a. around the clock on a fixed schedule
 _____ b. only when the patient asks for the medication
 _____ c. only when the nurse determines that the patient has moderate or greater discomfort
27. A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200 mg/hour intravenously. Today he has been receiving 250 mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is
 _____ a. less than 1%
 _____ b. 1-10%
 _____ c. 11-20%
 _____ d. 21-40%
 _____ e. > 41%
28. The most likely reason a patient with pain would request increased doses of pain medication is
 _____ a. The patient is experiencing increased pain.
 _____ b. The patient is experiencing increased anxiety or depression.
 _____ c. The patient is requesting more staff attention.
 _____ d. The patient's requests are related to addiction.
29. Which of the following is useful for treatment of cancer pain?
 _____ a. Ibuprofen (Motrin)
 _____ b. Hydromorphone (Dilaudid)
 _____ c. Gabapentin (Neurontin)
 _____ d. All of the above
30. The most accurate judge of the intensity of the patient's pain is
 _____ a. the treating physician
 _____ b. the patient's primary nurse
 _____ c. the patient
 _____ d. the pharmacist
 _____ e. the patient's spouse or family
31. Which of the following describes the best approach for cultural considerations in caring for patients in pain:
 _____ a. There are no longer cultural influences in the U.S. due to the diversity of the population.
 _____ b. Cultural influences can be determined by an individual's ethnicity (e.g., Asians are stoic, Italians are expressive, etc).
 _____ c. Patients should be individually assessed to determine cultural influences.
 _____ d. Cultural influences can be determined by an individual's socioeconomic status (e.g., blue collar workers report more pain than white collar workers).
32. How likely is it that patients who develop pain already have an alcohol and/or drug abuse problem?

< 1%

5 – 15%

25 - 50%

75 - 100%

33. The time to peak effect for morphine given IV is
 _____ a. 15 min.
 _____ b. 45 min.
 _____ c. 1 hour
 _____ d. 2 hours
34. The time to peak effect for morphine given orally is
 _____ a. 5 min.
 _____ b. 30 min.
 _____ c. 1 – 2 hours
 _____ d. 3 hours
35. Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:
 _____ a. sweating, yawning, diarrhea and agitation with patients when the opioid is abruptly discontinued.
 _____ b. Impaired control over drug use, compulsive use, and craving
 _____ c. The need for higher doses to achieve the same effect.
 _____ d. a and b

Case Studies

Two patient case studies are presented. For each patient you are asked to make decisions about pain and medication.

Directions: Please select one answer for each question.

36. Patient A: Andrew is 25 years old and this is his first day following abdominal surgery. As you enter his room, he smiles at you and continues talking and joking with his visitor. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.

- A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew's pain.

0	1	2	3	4	5	6	7	8	9	10

No pain/discomfort						Worst Pain/discomfort				

B. Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time.

- _____ 1. Administer no morphine at this time.
 _____ 2. Administer morphine 1 mg IV now.
 _____ 3. Administer morphine 2 mg IV now.
 _____ 4. Administer morphine 3 mg IV now.

37. Patient B: Robert is 25 years old and this is his first day following abdominal surgery. As you enter his room, he is lying quietly in bed and grimaces as he turns in bed. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.

A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Robert's pain:

0 1 2 3 4 5 6 7 8 9 10

No pain/discomfort

Worst Pain/discomfort

B. Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time:

- _____ 1. Administer no morphine at this time.
- _____ 2. Administer morphine 1 mg IV now.
- _____ 3. Administer morphine 2 mg IV now.
- _____ 4. Administer morphine 3 mg IV now.

Appendix C
Demographics Form

Demographic Form

1. Select your appropriate age group

- | | |
|---|--|
| <input type="checkbox"/> 18-20 years of age | <input type="checkbox"/> 51-60 years of age |
| <input type="checkbox"/> 21-30 years of age | <input type="checkbox"/> 61-70 years of age |
| <input type="checkbox"/> 31-40 years of age | <input type="checkbox"/> 71 years of age and older |
| <input type="checkbox"/> 41-50 years of age | |

2. Select your gender

- | | |
|-------------------------------|---------------------------------|
| <input type="checkbox"/> Male | <input type="checkbox"/> Female |
|-------------------------------|---------------------------------|

3. Select your current nursing specialty area

- | | |
|---|---|
| <input type="checkbox"/> Medical | <input type="checkbox"/> Intensive care |
| <input type="checkbox"/> Surgical | <input type="checkbox"/> Hospice |
| <input type="checkbox"/> Oncology | <input type="checkbox"/> Home health |
| <input type="checkbox"/> Emergency / Trauma | <input type="checkbox"/> Other: _____ |

4. Select your current employment setting

- ☐ Acute-care
- ☐ Long-term care
- ☐ Home-care
- ☐ Other: _____

5. Select the highest nursing degree currently held

- | | |
|--|--|
| <input type="checkbox"/> Diploma | <input type="checkbox"/> Master's degree |
| <input type="checkbox"/> Associate degree | <input type="checkbox"/> Doctoral degree |
| <input type="checkbox"/> Bachelor's degree | |

6. Select the number of years you have been practicing as a RN

- | | |
|--------------------------------------|---|
| <input type="checkbox"/> 1-5 years | <input type="checkbox"/> 26-30 years |
| <input type="checkbox"/> 6-10 years | <input type="checkbox"/> 31-35 years |
| <input type="checkbox"/> 11-15 years | <input type="checkbox"/> 36-40 years |
| <input type="checkbox"/> 16-20 years | <input type="checkbox"/> 41-45 years |
| <input type="checkbox"/> 21-25 years | <input type="checkbox"/> 45 or more years |

7. Select the number of hours you work as a RN each week

- | | |
|---|--|
| <input type="checkbox"/> 1-10 hours weekly | <input type="checkbox"/> 31-40 hours weekly |
| <input type="checkbox"/> 11-20 hours weekly | <input type="checkbox"/> 41 or more hours weekly |
| <input type="checkbox"/> 21-30 hours weekly | |

8. Select your race/ethnicity

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Caucasian | <input type="checkbox"/> Hispanic |
| <input type="checkbox"/> African-American | <input type="checkbox"/> Other: _____ |

9. Select the number of patients you provide pain management to weekly

- | | |
|---|--|
| <input type="checkbox"/> 1-10 patients | <input type="checkbox"/> 31-40 patients |
| <input type="checkbox"/> 11-20 patients | <input type="checkbox"/> 41-50 patients |
| <input type="checkbox"/> 21-30 patients | <input type="checkbox"/> 50 or more patients |

10. Select the number of patients you provide end-of-life care to weekly

- | | |
|---|--|
| <input type="checkbox"/> 1-5 patient | <input type="checkbox"/> 21 or more patients |
| <input type="checkbox"/> 5-10 patients | |
| <input type="checkbox"/> 11-15 patients | |
| <input type="checkbox"/> 16-20 patients | |

List any prior pain management courses or education you have received
